Region 3 GPRA Baseline RCRA Corrective Action Facility

Atlantic Research Corporation

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Gainesville, VA 20155
Congressional District 10
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Current Progress at the Site

The RCRA Record of Decision (ROD) was signed on September 30, 1991, approving the combination of corrective measures in the areas of Building 28 and 40**.** The corrective measures included: 1) the excavation and soil shredding with on-site redeposition (volatile organic compound (VOC) removal from the soil); 2) the excavation of inorganic contaminated soil for off-site treatment and disposal; 3) the pumping and treatment of the contaminated groundwater to remove the VOCs and 4) the monitoring of streams points of compliance and the shallow and deep aquifers to evaluate the effectiveness of the soil remediation and the effectiveness in attaining the clean up standards specified in the Explanation of Significant Differences (July 31, 1992) under intrinsic remediation.

In November 1992, the United States Environmental Protection Agency (EPA) and the Atlantic Research Corporation (ARC) entered into a Corrective Measure Implementation (CMI) Consent Order requiring the implementation of the corrective measures selected in the ROD. Residual chlorobenzene soil contamination, remnant of a previous release (which was addressed as per an Oct 98 interim measure work plan), in the vicinity of Building 201 was addressed as an interim measure.

In January 1994, the remediation program for VOCs soil contamination in the Buildings 201, 28 and 40 areas was completed.

In November/December 1993 and July 1994 the groundwater treatment system was upgraded.

ARC implemented streams and shallow and deep aquifer groundwater monitoring program since April 1994 (shallow wells and streams) and January 1987 (deep wells). In April 1997, ARC submitted two-year monitoring reports that showed that the soil remediation was successful. The reports recommended reducing the frequency of monitoring for the shallow and deep aquifers to annually and to operate the deep ground water monitoring system in a pulse pump mode to enhance the reduction of contaminant removal and to expedite attaining ROD remediation goals. On June 5, 1998, EPA approved the recommendation to monitor select wells on a semi-annual basis, the other non-pumping wells on an annual basis, monitor all accessible wells ground water elevations on a quarterly basis and monitor pumping wells on bimonthly basis. EPA also agreed with ARC's proposal to evaluate alternative treatment technologies to enhance the remediation of the shallow aquifer and to reduce the demand on the production wells in an effort to simulate natural attenuating conditions.

On November 8, 1998, ARC submitted a dual phase extraction pilot (DPE) test proposal. ARC proposed to evaluate the effectiveness of the DPE technology for remediating residual VOC contamination in the shallow groundwater in the vicinity of Building 40. Two scenarios were proposed: 1)evaluating treating the groundwater/soil adjacent to the stream (in the vicinity of well SW 40-06), and 2) evaluating treating the core contaminated groundwater area (in the vicinity of well SW40-07). ARC implemented the DPE pilot test from December 1998 through March 1999.

From August 1997 to December 1998, ARC operated the deep well groundwater monitoring pump and treatment system in a pulse-pumping mode. In the Fall of 1998, ARC began implementing the deep groundwater shut down test by only operating selected production treatment wells on demand to supply non-contact cooling water for on-site production use. The test was conducted over a six month period.

On September 28, 2001 and December 14, 2001, ARC submitted a notification informing EPA of the discovery of a perchlorate groundwater contaminant plume at the facility. As a result of the discovery of the perchlorate groundwater contamination plume, ARC determined that a supplemental RCRA investigation and interim measures were deemed necessary to evaluate the source and the risks, to delineate the extent of contamination, and to control and treat the contaminant plume.

EPA reviewed the recent reports submitted (Five-Year and 2000 and 2001 Shallow Groundwater/ Stream and Deep Groundwater Monitoring Evaluation Reports, the Supplemental RCRA Facility Investigation and Interim Measures Work Plan and the Deep and Shallow Groundwater In Situ Anaerobic Bioremediation Pilot Test Work Plans) for comment and/or approval. EPA has granted partial conditional approval of the Supplemental RCRA Facility Investigation and Interim Measure and Shallow Groundwater In Situ Anaerobic Bioremediation Pilot Test Work Plans pending further evaluation of case study data on the proposed remedial technology. Implementation of the first and second phases of the Supplemental RCRA Investigation and deep and shallow pilot tests began in the fall of 2002. The results from the first phase of the Supplemental RCRA Investigation are under evaluation by the facility.

Site Description

ARC owns and operates the Gainesville, Virginia Facility on 420 acres in Gainesville, Virginia located in a wooded, rural environment. The Facility began operations in 1951. The Facility is located approximately 35 miles west of Washington, DC, in the north central portion of Virginia The Facility is primarily a Department of Defense contractor which manufactures rocket propellant and rocket motors, tests rocket motors and gas generators, conducts laboratory research, and operates three thermal treatment processes. Degreasing solvents have been used in the Facility operations. The facility is composed of approximately 100 structures: administrative office buildings, solid rocket motor production and testing operations, research laboratories, and design technology areas.

Site Responsibility

RCRA Corrective Action activities at this facility are being conducted under the direction of EPA Region 3.

Contaminants

Based on the risk calculations, tetrachloroethylene (PCE), 1,1-dichloroethene (1,1-DCE), methylene chloride (MC), hexachlorobenzene, chromium and arsenic were the primary constituents of concern. Findings of investigations conducted at this facility have detected VOC contamination in the deep groundwater aquifer (PCE, 1,1-dichloroethene (1,1-DCE) and 1,1,1-trichloroethane) and in the

shallow aquifer (PCE, 1,1-dichloroethane and 1,1-DCE), detected TCE predominantly and also PCE, 1,2-dichloroethene, 1,1,1-TCA, 1,1-DCA, 1,1-DCE and vinyl chloride in the surface water organic contamination, and solvent soil contamination (PCE, MC, 1,1-DCE). Perchlorate contamination was recently detected in the groundwater in 2001.

Community Interaction

Residential properties previously in the vicinity of the Facility to the south have been converted to industrial operations and an out door amphitheater. Community relation activities will be undertaken when necessary (for example, organize public meetings, develop fact sheets or continue to respond to telephone inquiries by the public businesses).

Government Contacts

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For more information about EPA's corrective action webpage, including Environmental Indicators, please visit our site at: www.epa.gov/reg3wcmd/correctiveaction.htm